

Applicants : Iris Bahir & Shmuel Ben-Sasson  
Atty. Dkt. No.: 1120-PCT-US  
USSN : 10/550,870 Art Unit : 1638  
Filed : 7/24/2006 Date of office action: 9/21/2007  
Examiner : Li Zheng Date of response: 12/18/2007  
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REMARKS

Claim Status

Claims 25-48 are pending, wherein claims 26-29, 34-38, and 45-48 are withdrawn from consideration.

Claim Objection

Claim 25 is objected to for not reciting "and". Applicants submit that appropriate correction has been made to claim 25.

Rejection Under 35 U.S.C. §112, Second Paragraph

Claims 25, 30-33 and 39-44 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The rejection is respectfully traversed.

The two "the" preceding "generation" and "incorporation" in claim 25 have been deleted. The phrase "suitable conditions" has also been deleted from claim 25. The term "wherein the MS-like DNA fragment comprises a monotonous repeat of two to six nucleotides" has been added to step (a) of claim 25. Support for this amendment may be found, *inter alia*, from SEQ ID NO. 4 which is a monotonous repeat of two nucleotides.

Claim 30 has been amended to delete the word "suitable".

Claims 31 and 33 have been amended to delete the word "preferably".

Claims 39, 40 and 41 have been amended to recite "said MS-like DNA fragment".

Claim 40 has been further amended to replace the term "such as" with "selected from the group consisting of".

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Claim 42 has been amended to replace the term "exogenous DNA" with "MS-like DNA fragments".

Applicants submit that the claims have been amended to obviate the rejection. Accordingly, Applicants respectfully request that the rejection of claims 25, 30-33 and 39-44 under 35 U.S.C. §112, second paragraph, be withdrawn.

Rejection Under 35 U.S.C. §112, 1st Paragraph

Claims 25, 30-33 and 39-44 are rejected under 35 U.S.C. §112, 1st paragraph, for failing to comply with the written description requirement. The rejection is respectfully traversed.

The present invention is drawn to a method of generating genetically diverse plants via incorporation of exogenous micro-satellite (MS) sequences into the plant genome, said method comprising the following steps: (a) obtaining MS-like DNA fragments, wherein said MS-like DNA fragment comprises a monotonous repeat of two to six nucleotides; (b) introducing said DNA fragments into plant cells; (c) selecting the plant cells containing said DNA fragments; and (d) cultivating the selected plant cells.

The method disclosed herein generates genetic diversity in a random manner. Applicants provide a proof of principle by generating genetically diverse plants with five different MS-like sequences (SEQ ID NOS. 1-5). Examples of MS-like sequences disclosed in the specification include: (AT)<sub>n</sub>, (CT)<sub>n</sub> and (AG)<sub>n</sub> for repeats of two nucleotides; (AAG)<sub>n</sub>, (CGG)<sub>n</sub>, and (TTC)<sub>n</sub> for repeats of three nucleotides; (ATCG)<sub>n</sub>, (AAAT)<sub>n</sub>, and (TTTA)<sub>n</sub> for repeats of four nucleotides; and (AAGTTC)<sub>n</sub> for a repeat of six nucleotides.

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Applicants submit that MS-like sequences are well-known in the art, and one of ordinary skill in the art would readily recognize and/or construct MS-like sequences comprising monotonous repeats of two to six nucleotides. Applicants further submit that the specification has provided representative examples of MS-like sequences comprising monotonous repeats of two, three, or four nucleotides. The specification also has provided a precise structural feature that is common to members of the recited MS-like sequences, namely the MS-like DNA sequences are monotonous repeats of two to six nucleotides.

In view of the above remarks, Applicants submit that the specification has disclosed (i) a representative number of the recited MS-like sequences, and (ii) a structural feature common to members of the recited MS-like sequences. Accordingly, Applicants respectfully request that the rejection of claims 25, 30-33 and 39-44 under 35 U.S.C. §112, 1st paragraph, be withdrawn.

**Rejection Under 35 U.S.C. §112, 1st Paragraph**

Claims 25, 30-33 and 39-44 are rejected under 35 U.S.C. §112, 1st paragraph, for lack of enablement. The rejection is respectfully traversed.

The present invention has been discussed above. In view of the quantity of experimentation necessary, the amount of guidance presented, the presence of working examples, the nature of the invention, the state of the art and the skill of those in the art, the predictability of the art, and the breadth of the claims, Applicants submit that no undue experimentation is required to practice the present invention.

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The Examiner contends that the specification fails to provide guidance on how to obtain MS-like DNA sequences, and undue trial and error experimentation would be required to obtain the MS-like DNA sequences. Applicants respectfully disagree. Applicants submit that MS-like sequences are well-known in the art, and one of ordinary skill in the art would readily recognize and/or construct MS-like sequences comprising monotonous repeats of two to six nucleotides as claimed herein. As discussed above, the specification has provided representative examples for MS-like sequences comprising monotonous repeats of two to six nucleotides, and one of ordinary skill in the art would readily construct or isolate such MS-like sequences by standard molecular biology techniques such as chemical synthesis or PCR reactions (see page 14). And in view of the working examples disclosed herein showing random insertion of MS-like sequences comprising monotonous repeats of two to six nucleotides would generate genetically diverse plants, one of ordinary skill in the art would readily transform plant cells with such MS-like sequences by standard molecular biology techniques. Finally, regarding the breadth of the claim, the present invention is limited to using MS-like sequences comprising monotonous repeats of two to six nucleotides. Applicants submit that the scope of the claims is fully commensurate and enabled by the disclosure provided herein. Accordingly, Applicants respectfully request that the rejection of claims 25, 30-33 and 39-44 under 35 U.S.C. §112, 1st paragraph, be withdrawn.

**Rejection Under 35 U.S.C. §102(b)**

Claims 25, 30-33 and 39-44 are rejected under 35 U.S.C. 102(b) as being anticipated by LeClere et al. (2001). The Examiner contends that LeClere et al. teach the use of oligo(dT) that meets the definition of MS-like DNA fragment of the present invention. The rejection is respectfully traversed.

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Claim 25 as amended is drawn to a method for generating genetically diverse plants via incorporation of exogenous micro-satellite (MS) sequences into the plant genome, comprising the step of obtaining MS-like DNA fragments comprising a monotonous repeat of two to six nucleotides. Since LeClere et al. do not teach using MS-like DNA fragments comprising a monotonous repeat of two to six nucleotides as claimed herein, LeClere et al. do not anticipated the present invention. Accordingly, Applicants respectfully request that the rejection of claims 25, 30-33 and 39-44 under 35 U.S.C. 102(b) be withdrawn.

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Conclusion

Applicants respectfully maintain that all the grounds of rejections raised in the September 21, 2007 Office Action have been addressed and earnestly urge the Examiner to render favorable action for the claimed invention.

If a telephone interview would be of assistance in advancing prosecution of the present application, Applicants' undersigned attorney invites the Examiner to telephone him at the number provided below.

No fee is deemed necessary in connection with the filing of this Response. However, if a fee is required, authorization is hereby given to charge the amount of any such fee to Deposit Account No. 50-1891.

Respectfully submitted,  
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